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Mount Ograshden is one of the least known Bulgarian mountains. Its very name indicates some sort of boundary or enclosure. And indeed, lying parallel to the Struma River, it borders the valley on the west for a distance of about 50 to 60 km, starting from the Breznitsa River on the north, and extending to the Strumenstitsa River valley on the south. Here it must be noted that in geographic literature and maps, the name Ograshden applies only to that part of the mountain which is located south of the Lebnitza River, while the part between the Lebnitza River and the Breznitsa River is called Mount Maleshvitsa. However, the entire population of this region calls both parts of the mountain by the same name -- Ograshden. The name Maleshvitsa probably derives from the Maleshovo region situated on the upper reaches of the Bregalnitsa River. Since there are no significant geological or geomorphological differences between the 2 parts, it is correct to consider under the name Ograshden the entire mountain region included between the valleys of the Strumenstitsa and Breznitsa rivers, as is done by the local population.

Ograshden belongs to the middle altitude class of Bulgarian mountains. One of its most distinctive peaks, which has given its name to the entire mountain, the Ograshdenets Peak, rises 1,744 m high. The mountain has clearly defined borders only on the east and south. These are the wide valleys of the Struma and Strumenstitsa rivers, toward which slope long, deeply cut hills. To the north and west, the boundary is not clearly defined. The mountain merges imperceptibly here with Mounts Vlahkina and Plodilovitsa.

The deep cut valley of the Iskritsa River divides Mount Ograzhden into 2 unequal parts, which differ from one another in numerous aspects. The north part is called Sandanski Ograzhden, and the southern is called Petrichki Ograzhden. In general, the main ridge of Sandanski Ograzhden runs from north to south, and part of it is the watershed between the Struma and Vardar Rivers. It also follows the boundary line between the Bulgarian People's Republic and the Federated People's Republic of Yugoslavia. The main ridge of Petrichki Ograzhden stretches from east to west, parallel to the ridge of Mount Belasitsa. On its bare, ravined area rise the high rounded contours of Galak Peak (1,630 m) and Markovi Kladentsi (1,533 m). It separates the valley of the Iskritsa River from that of the Strumitsa River.

Numerous rivers run down the eastern and southern slopes of Ograzhden. Those which lead to the east, toward the valley of the Struma River, are longer and fuller. The largest of them are the Breznitsa, Slivnitsa, Zamoritsa, Tseporevitsa, Brachka, and Iskritsa Rivers. Their valleys are deep cut into the body of the mountain, making it very difficult to cross. The inclination of the river beds is considerable, and this permits the washing down of huge quantities of alluvial materials, particularly during torrential rains. These deposits accumulate at the point where the rivers leave the mountain, where they have formed huge, in area and thickness, alluvial cones. The material from which these cones are built up is very varied. Closest to the river bed are found large blocks (up to 2 m in diameter), while toward the periphery the thickness of the cones gradually decrease; sand and silt from the end farthest away from the river bed.

The Iskritsa River is the biggest and fullest of all the Ograzhden rivers. Its inclination is relatively slight and its water flow is

constant. Its source is in the western part of Ograshden in Yugoslavia and it runs straight toward the east, cutting the central body of the mountain into 2 parts. In numerous places both banks of its older bed retain traces of old terraces, now either under cultivation or rich grazing pastures. At Bihadin village, the Lebitica River has formed a rather wide valley, in which fruit (plums and apples) grow very well, and now this region looks like an oasis lying among the generally bare areas of the mountain.

The roads here run parallel to the river valleys, along on the mountain ridges separating the valleys. Gross roads are almost nonexistent, with the exception of narrow, steep and difficult paths, along which one can move only on foot, by donkey, mule, or horse. Unlike the settlements in other Bulgarian mountain regions, the settlements here are located not in the river valleys, but are perched high on the incline of the slopes, or on the flat ridge surfaces. Going from one village to another usually requires crossing a deep valley. Thus for example, from afar the Tsaparevo and Garevo villages look like being close to one another. True, they are located on opposite banks of the Tsaparevsha River, and the distance between the 2 as the crow flies is only 1,700 m. However, in order to go from one of the villages to the other, one must follow a long, meandering, steep path, and descend from over 200 m to the river bed, from which there is a 300-m climb upward. This is the case with numerous other villages. Travel between 2 villages located at a greater distance is even harder, if 2 or more such valleys have to be crossed.

Geologically, Mount Ograshden is rather uniform. Its eastern and central parts consist of biotite and muscovite schists, with partial gneiss. Its crystalline schists run from the northwest to

the southeast, with varied inclination, in places as much as  $30^{\circ}$  to  $50^{\circ}$ . These rocks are much crushed and crumpled, rendering them so to be carried away by wind or erosion. These characteristics of the rocks partially account for the deep cuts made by rivers and their tributaries, and the easy removal of eroded materials by the torrential waters. The western parts of the Mount Ograshdon consist of gneiss, mixed in some places with volcanic rock. The solidly welded conglomerates, which constitute the vein through the lower parts of the mountain near the valley of the Struma River, include deposits of fluorite, which are now being tapped at the Slavyanka mine.

Geomorphologically, Mount Ograshdon is characterized by the deeply cut river valleys, between which loom the numerous ravines and ridges. Their size varies greatly, but predominantly they lie in an east-west direction. Their exterior appearance is characterized by a sharp inclination, rocky slopes, and rare forest cover or vegetation. The inclination of the slopes is particularly great near the river beds -- an average of  $30^{\circ}$  to  $50^{\circ}$ . The higher we climb, the less the inclination is. The slopes level off gradually into flattened parts of the ridges. This late erosion of the valleys, which is still actively continuing, proves that the mountain was formed in a recent date.

The top parts of the ridges represent remnants of old denuded (flattened) surfaces. The slighter inclination and the relatively weak erosion along these surfaces have contributed to the formation of a comparatively thick soil blanket. That is why these areas are best suited for agriculture. The best cultivated areas, on which grow potatoes, rye, corn, etc are here. Natural meadows and grazing grounds also occupy considerable surface. Many of the slopes on

which rivers and ravines begin are covered by thick alluvial deposits, and are well protected from the winds. They are covered with beautiful orchards. Despite the fact that these orchards are located at an altitude of 1,100 to 1,300 m -- the upper limit of the growth of plum trees on Mount Ogranidza -- fruit growing here yields a comparatively good income to the local population, and this proves that orchard growing can be expanded even more. This, however, will require considerable state aid. It is necessary to guarantee the population planting material at cheap prices, to be available on the spot, and to organize timely transportation of the crop to processing sites or the market.

The comparatively light erosion of the basic rocks, the steep inclination of the slopes and particularly the merciless cutting down of forests have contributed to the violence of the torrents in the mountain. The slopes with a southern exposure, where trees and also other vegetation are rare, entirely lacking in places, are exposed to torrents. Soil erosion is at present greatly speeded up by the extensive plowing of slopes having an incline of 25° to 30°. In such fields, the soil is easily carried away by torrential waters. In 3 to 4 years the soil is entirely washed away, and soon the basic rock appears on the very surface. In such cases, the farmers have to abandon these parcels of land and plow neighboring ones, at the expense of meadows and forests. Thus, for years on end during the capitalistic epoch, the local population, left unattended by the state, and needing for a livelihood, destroyed its forests and meadows in order to make them into fields, never suspecting the terrible consequences stemming from this kind of exploitation of the soil. The once forest-covered Mount Ogranidza, with its rich green grazing rounds and running mountain

streams, has now been transformed into one of the most torrent-prone regions of Bulgaria. This is particularly true in the Petrovo part of the mountain.

Wherever he may look, the traveller in Ograzhden can see only one consistent picture: rare, puny forests; poor, small eroded fields; dry meadows and grazing grounds; and for the most part, bare, empty and abandoned areas. The state of the forests is particularly bad. Only individual patches have remained of the once thick oak and beech forests. The reason for this situation is poor care during the epoch of capitalism, and to some extent during the present era. The local population counted heavily upon the forests to provide a livelihood. From them they took timber, fuel wood, and fodder for small animals. The forests have suffered particularly from the practice of branch cutting, widely spread here. Periodically (every several years) only the branches of the trees are cut, and the trunks remain, looking like straight, lonely poles. As a result of such exploitation, the forest gradually withers, dries up, and the waters quickly wash the soil along the bare slopes away, leaving the roots of the trees and the rocks exposed.

However, it is not only the aspect of the mountain that has changed. The huge amounts of soil and rock carried away by the rivers are deposited where the valleys begin, along the terraces of the Struma and Strumeshitsa Rivers. They cover vast areas of valuable arable land, influence the course of the Struma River, and cause the spreading of the water into marshes and along the lower terraces of the river. Thus, during the last 30 to 40 years alone, over 15,000 decares of arable land along the bed of the Struma River's middle course have become unusable. In the past they yielded 2 crops a year.

Today the people's regime is devoting much attention to the struggle against the destructive consequences of the violent and rapacious exploitation of the natural wealth of Ograshdon in the past. Many afforestation measures have been undertaken for the planting of vegetation to which local conditions are favorable. Incessant care is given to the preservation of the existing forests and the proper use of grazing grounds. All this, however, is entirely insufficient. Efforts must above all be directed toward the establishment of a system of antierosion measures, which should be applied to land under cultivation, the forests, and grazing grounds. The terrain subject to strong torrential activity must be entirely afforested, and arable land with an inclination of over 15° must be planted with grass. This will considerably increase the fodder basis for livestock breeding, which is now reduced to a minimum, and will decrease soil erosion. The planting of new orchards can be carried out, principally on the slopes protected from the winds.

#### FIGURE CAPTIONS

[Page 5 of original] Morphohydrographic sketch of Mount Ograshdon

[Page 6 of original] View from the top of Mount Ograshdon

[Page 6 of original] Lebaitza River at the Nikudin village

[Page 7 of original] Stream-like erosion on cultivated fields with 15° to 20° inclination, after torrential rain and hail on 18 May 1966

[Page 7 of original] Slopes washed away by torrents in Mount Ograshdon

[Page 8 of original] Cutting branches of oak trees for fodder in Mount Ograshdon